9 JUL 1981

DDS&T-1578-81

MEMORANDUM FOR: Director of Personnel

FROM: Leslie C. Dirks
Deputy Director for Science and Technology

SUBJECT: Recruitment of Physical Scientists and Graduates from R. I. T. Photographic and Instrumentation Program

1. This memorandum contains two recommendations for your consideration and approval. These recommendations are contained in paragraphs 5 and 6.

2. Attached is a memorandum written by [redacted] STAT
STAT [redacted] Photographic Science and Instrumentation Division, Rochester Institute of Technology (R.I.T.). The salary data in his memorandum has created concern among DDS&T management, and also impacts on positions of NFAC and the DDA. The June 1980 salary figures for graduates with a BS degree range from $18,100 (GS-07/7) to $22,500 (GS-09/8), with the average of $19,651 (GS-08/6). The June-August 1980 average salary offer for graduates with an MS degree was $23,280 (GS-09/9).

STAT 3. If [redacted] salary data is accurate, and we believe it is since it has been supported by information obtained during applicant interviews, it seems that DDS&T will have little luck in employing R. I. T. graduates, and definitely will not be competitive for the best-qualified graduates if we are restrained by the present guidelines of hiring at the GS-07 level for BS degree and the GS-08 level for MS degree.

4. As is pointed out in [redacted] memorandum, R. I. T. is STAT unique in that it offers the only university program in Photographic Science and Instrumentation in the Western Hemisphere. Obviously this makes the R. I. T. graduate a highly-recruited person. The present salary offers have most probably risen since last June, making our employment guidelines even more out of line. The occupational categories which qualify for GSE pay have been examined, but the R. I. T. graduate and other physical scientists do not fit into any of them.

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5. The Office of Personnel has been operating on the principle that the Agency will match any reasonable salary offered by private industry. Insteps are used to meet these salary levels, but the guidelines regarding grade levels are enforced. DDS&T must compete for top-quality physical scientists as well as top-quality engineers. In recognition of this need, it is recommended that the Agency establish a special pay scale. A GSS pay scale, identical to the GSE pay scale is recommended. The establishment of such a pay scale will recognize the need for high quality and excellent credentials at the entry level for physical scientists.

6. We realize that before the creation of a government-wide special pay scale could be authorized by the Office of Personnel Management, an exhaustive study would have to be done as well as coordination by the affected Federal Agencies. This could take several years. In the meantime, a more practical approach would be to approve higher EOD rates for physical scientists under the existing General Schedule. It is our understanding that it is within your current authority to authorize the hiring of physical scientists at the GS-08 level with a BS degree, and at the GS-09 level with an MS degree. Then, depending on class standing, skills and competitive market, the components could request advanced within-grade steps, if necessary. This approach has the benefit of providing an immediate and feasible solution to our common problem. It is recommended that you approve the above authorization to be used temporarily until OPM approves a special pay scale.

STAT

Leslie C. Dirks

Attachment:

STAT

memo

The recommendation in paragraph 6 is approved:

Director of Personnel

Date

I iester Institute of Technology

One Lomb Memorial Drive
Rochester, New York 14623

Office Memo

To STAT
From
Date
Subject

Memorandum of Record

[redacted] Photographic Science and Instrumentation Division

September 12, 1980

Review of Graduate Starting Salaries, June 1980

This year's review shows the salaries continue to rise and the opportunities for our graduates are at an unprecedented level. Mainly responsible are:

a) The continued increase in the quality of incoming students and the quality adjustments to our program.

b) The Bureau of Labor Statistics continues to rank the growth of the photography, optics, general imaging industry highly. We have been ranked as high as the third fastest growing industry in the U.S.

c) The electronics industry within the past three years has discovered the R.I.T. photoscience graduate with his and her knowledge of photo resist technology, tone reproduction, optics, image evaluation and statistics. This has greatly diminished the number of graduates available to employers of longer standing. Additionally, our graduates are our best ambassadors and, as more of them go into the field and the number of employers of our graduates expand, the more demand this has produced on subsequent graduates, as our students, and in particular the emphasis on applications in their B.S. and M.S. education, are well received.

d) We have the only university program in Photographic Science and Instrumentation in the Western Hemisphere and the only one of four in the non-communist world. Only the program at Chiba, Japan bears resemblence in breadth, size and goals.

The job availability critically exceeds the number of qualified applicants and graduates of the R.I.T. Photoscience Program. This year, without much effort on our part to search for new employment opportunities for our students, this situation approximates 100 to 30. Earliest estimates of potential employer interviews for the Fall of 1980 indicates that the demand will increase and the gap will broaden significantly this year.

Our efforts must be further increased to gain more qualified candidates for the Photoscience degrees and to gain increased assistance to our

programs from the employers of our graduates, in view of their needs.

The following table shows the salary data compiled for degrees awarded in 1979 and 1980.

		Number of responses	High	Low	Average
June 1979	BS	14	$20,000	13,000	17,550
June 1980	BS	19	$22,500	18,100	19,651
June-August 1979	MS	..... no data			
June-August 1980	MS	8	$25,400	19,680	23,280

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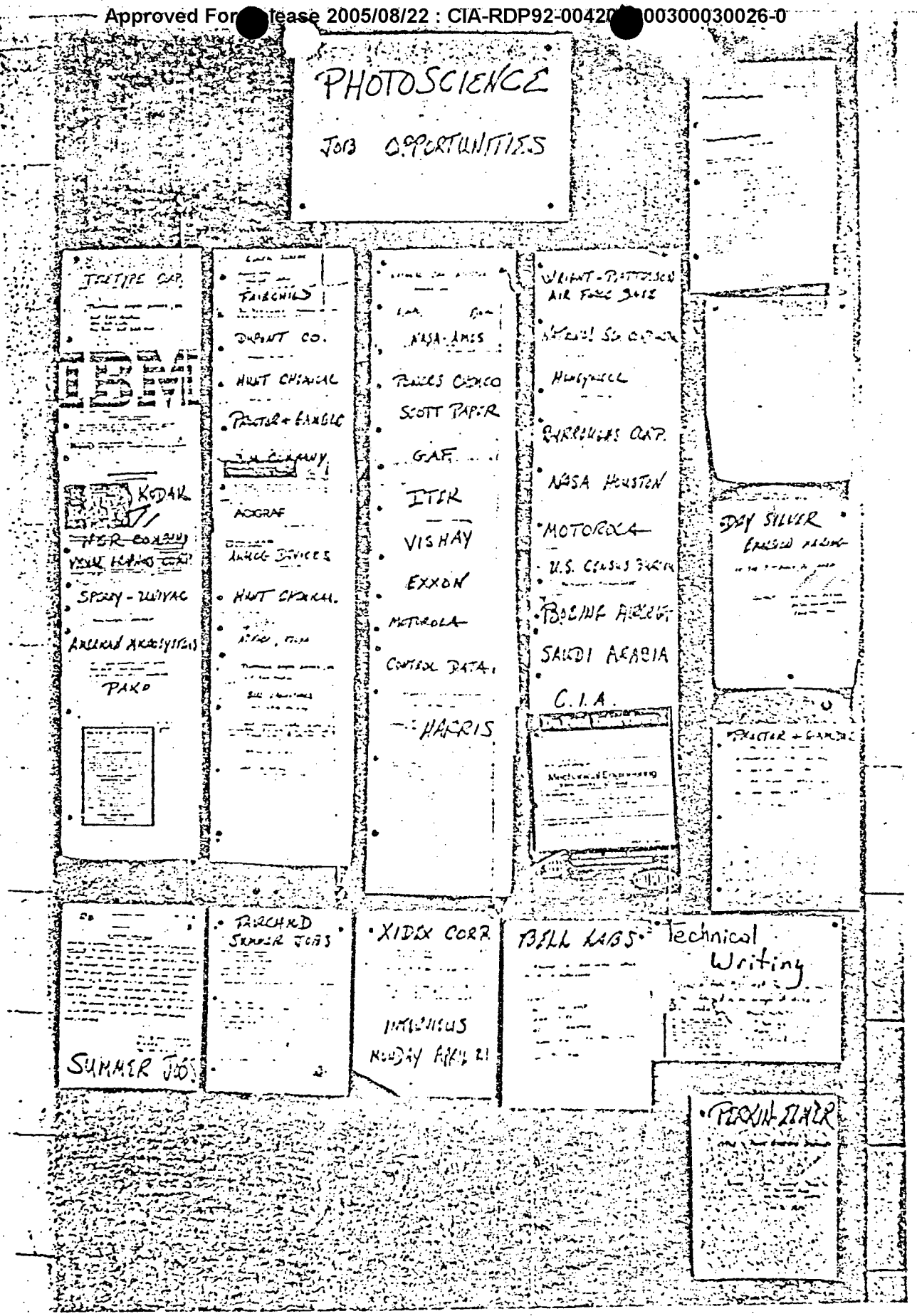
[redacted] STAT



Relevance of the Photographic Science and Instrumentation Program at R.I.T.
to the Missions of Military Intelligence

Photographic Science and Instrumentation is a full-fledged science and engineering program with very demanding requirements in physics, chemistry and mathematics. The emphasis of our students within the Division appears to fall, although not necessarily, into one of three categories.

Students with chemistry inclinations are concerned with the improvements with the materials and processes of photography, emulsions and film research, developer theory and design, and research into and applications of non-silver halide photographic systems. Generally it is the "wet" side of photography.

Students with physics interests may specialize in optics and photographic instrumentation. The instrumentation engineer is concerned with the planning and new applications of photography and the adaptation of existing methods to new or specialized requirements. He is concerned with the use of photography in data acquisition, and as a measurement device.

Students in photographic science are becoming increasingly involved in acquiring capabilities in computer technology for the design of experiments and the interpretation of photographic results. Statistics and quality assurance has become another main speciality of students intending to enter the photographic industry or government laboratories.

We have used the following job description to describe the photographic scientist:

The Photographic Scientist develops new photographic materials and processes, investigates the theories on which processes and equipment depend, is responsible for applying photographic technology to the solution of problems related to industrial and scientific procedures and phenomena, designs and constructs and determines specifications for photographic materials and equipment, and plans setups of equipment and control procedures in photographic systems. Specific duties may include:

1. sensitometric evaluation of radiation-sensitive materials, including the design and specification of instruments for the exposure, processing, and densitometric analysis of black-and-white and color photographic materials,
2. investigation and evaluation of the microscopic spatial response of photographic, optical, and electro-optical image forming devices and systems,
3. design and specification of the optical, electrical, mechanical, and photographic components of data acquisition and retrieval systems,
4. specification of the chemical and physical parameters and instrumentation of photographic processing systems, and responsibility for quality control procedures,
5. design and development of radiation-sensitive formulations and coating and processing procedures for the manufacture and quality control of photographic materials.

R.I.T.'s program in Photographic Science and Instrumentation is unique in the United States, and is only one of five such schools in the non-Communist world. Programs at Zurich, Munich, Tokyo and Chiba are considerably smaller than R.I.T.'s.

R.I.T. offers a B.S. and an M.S. degree in Photographic Science. It is possible for our students to acquire a PhD by attending selected chemistry and physics departments in other universities specializing in optics, solid state physics, photo chemistry and physiological sciences.

Almost every segment of American business is an employer of graduates in Photographic Science and Instrumentation. For example, aerospace, micro-electronics, scientific instruments, graphic arts, microfilm, aerial survey and photographic chemicals, materials and equipment. Aside from industry, many graduates are employed by government agencies or laboratories with military or government contracts in aerospace, aerial surveying and information handling.

During the past twelve years approximately 60 graduates of the Photoscience Program have accepted positions with the Central Intelligence Agency, the Defense Intelligence Agency and similar organizations. These graduates have become involved with intelligence collection, photo interpretation and technical support to photo interpretors in evaluation, modification and specification of existing and proposed equipment and photographic materials and techniques.

To further describe the photographic scientist, and his relevance to military intelligence, two attachments are provided. One, entitled position description, Photographic Technologist (Reconnaissance Engineer) was prepared by technical groups at the Wright-Patterson Air Force Base. The attachment describing the career in Photo Technology was prepared by members of the intelligence community.

For the past 25 years the Rochester Institute of Technology, Photoscience Divisic has held an intensive 10-week summer program for personnel from the United State Navy and Canadian Forces. This program is directed towards carrier personnel and the reconnaissance community. Generally men and women from U.S. and Canadia bases throughout the world and from the U.S. Naval Fleet participate in this program. The content of the program consists of studies of current photographic films and developer techniques, precision photographic processing machines, study of color photography and study of the statistics of photographic quality assurance. It is a course in precision processing and instrumentation.

Additional information about the program may be obtained from Lt. O.P. Mason, c/o the Department of the Navy, Chief of Naval Technical Training, Naval Air Station Memphis, Millington, Tennessee, 38054, the telephone number of that office is 901/872-5954, and Major Donald Y. Vachon, DACS 6-2, Department of National Defence, National Defence Headquarters, Canadian Forces Base, Ottawa North, Ottawa, Ontario, Canada K1A 0K4. Major Vachon's telephone number is 613/993-2515.

For approximately the past 20 years R.I.T. has provided undergraduate and graduate education to the Master of Science degree for officers and men of the Unitec States Air Force and of the Canadian Forces. In addition, the Canadian Forces and Defense Mapping Agency personnel regularly spend a year at R.I.T. taking selected courses in subject areas of their job description on a special student basis. Information about these programs for the Canadian Forces may be obtained from Major Vachon. The United States Air Force program is administered by the Armed Forces Institute of Technology, and further information may be obtained by contacting Captain William Kaveney, Wright-Patterson Air Force Base, Ohio, 45433. The telephone number is 513/255-3291.

Further information concerning the photographic science program at R.I.T. may be obtained by contacting Dr. Ronald Francis, Staff Chairman, Photographic Science and Instrumentation Division, Rochester Institute of Technology, Rochester, New York, 14623. The telephone number is 716/475-2786.

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Approved For Release 2005/08/22 : CIA-RDP92-00420R000300030026-0